

Forum Series on the Role of Institutions in Promoting Economic Growth

The NIE Approach to Economic Development

An Analytic Primer

OMAR AZFAR

Forum 1

The Institutional Approach to Donor-Facilitated Economic Development

Introductory Session

11 February 2002

Washington, D.C.



Forum Series on the Role of Institutions in Promoting Growth

Directed by The IRIS Center

Sponsored by USAID, EGAT/EM

SEGIR/LIR PCE-I-00-97-00042-00, TO 07



About the Series

The objectives of the Forum Series are to help USAID make its donor assistance more effective and sustainable by incorporating insights from the New Institutional Economics into USAID's programming and delivery of development assistance. Services for the Forum Series are provided by the Center for Institutional Reform and the Informal Sector (IRIS) and its consultants. Editor for the Series is its project director, Clifford Zinnes, with support from the Forums Steering Committee (Ed Connerley, Jim Elliott, Jonathan Sleeper, and Thom Troung), chaired by the activity's COTR, Fred Witthans. Funding for the Series is provided by USAID's Bureau for Economic Growth, Agriculture, and Trade, Office of Emerging Markets through the SEGIR/LIR contract PCE-00-97-00042-00, Task Order 07. Copyright 2002 by the IRIS Center.

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For information, contact:

Dr. Clifford F. Zinnes

Director of Research Coordination

The IRIS Center at the University of Maryland

2105 Morrill Hall

College Park, Maryland 20742

Voice: 301-405-3064

Fax: 301-405-3020

zinnes@iris.econ.umd.edu

Forum 1 Introductory Session on NIE

THE NIE APPROACH TO ECONOMIC DEVELOPMENT: AN ANALYTICAL PRIMER

The IRIS Center
Department of Economics, University of Maryland University at College Park
January 11, 2002

“Omar Azfar” <omar@iris.econ.umd.edu>

Abstract

The aim of this paper is to introduce the reader involved in foreign assistance to some ways in which NIE can provide insights that help in the design of reform programs. This is not meant to be an exhaustive review of NIE and development. The paper is organized as follows: I begin by describing Williamson’s hierarchy of institutions: social structure and human motivations that take centuries or millennia to evolve, political institutions that take decades to gel, legal institutions that take years to be legislated, and the use of law by private parties that can be established over much shorter periods.

Within this discussion I introduce several conceptual ideas and theoretical insights from NIE:

- **Transactions costs** and the components of transactions costs (informational asymmetries and the administrative costs of reducing informational asymmetries).
- The **incomplete contracts problem**, which refers to how to design contracts when important variables cannot be observed.
- The **principal-agent problem**, which refers to how a principal who cannot observe the agent’s action, can induce the agent to take the right action.
- The **adverse selection problem**, which refers to the problem of creating markets where the quality of the goods or the trustworthiness of the participants is in question.
- The **collective action problem**, which refers to how any rational agent alone would undersupply effort or resources to resolve group problems.

The paper discusses the following insights: Aligning the incentives of agents with the interests of principals, and improving information flows about actions and outputs can improve outcomes. This applies to principal agent relationships in both the political sphere (voter-prime minister-civil servant) and the economic sphere (creditor-debtor, shareholder-manager). It also applies to clear property rights, which give private agents sharp incentives to minimize on costs while maintaining quality; and to solutions for collective actions like rewarding citizens who detect defectors. The paper also points out the limitations of NIE: Incentives are at times not appropriate; and NIE does not help much in changing human nature, rather it offers insights on how to harness existing human motivations for socially advantageous ends.

I then turn to empirical methods used in NIE, which are discussed in more detail in the Appendix. I start with cross-country empirics, which involves the study of statistical relationships between institutions and economic performance across countries. I then turn to micro empirics and describe how institutions can be measured by surveys and in-depth interviews. The next method discussed is analytic narratives, which combine theoretical models with rich description. Finally I discuss experiments, which are now entering the mainstream of economic analysis but have only begun to be applied to institutions.

THE NIE APPROACH TO ECONOMIC DEVELOPMENT: AN ANALYTICAL PRIMER

OMAR AZFAR^{*}

Revised: 2/21/2002

1. Introduction.

The last 50 years of development economics have seen hopes for global development raised high and dashed time and again. While there has been positive, sometimes even impressive, growth in many countries, in most of the world experience has not matched expectations. The accumulation of physical capital and human capital, liberalization and privatization have all been proposed as the elixirs of growth. While all these arguments have some merit, by themselves they are incomplete solutions to the problem of development. The essential ingredient that might catalyze the ingredients mentioned above into a thriving economy is good governance. The disappointing performance of the post-Communist transition, the slow growth of the 1970s and 80s in Africa and Latin America, and the Asian financial crisis of the 1990s were all rooted in poor governance. Good governance involves aligning the incentives of agents with the interests of principals in both economic and political spheres. How best to design these incentives is the question that New Institutional Economics answers.

The ‘Washington consensus’ in the 1980s urged developing country governments to liberalize their banking systems, privatize inefficient state enterprises, and reform their tax structures—all of which were causes of serious fiscal problems—and this advice was likewise passed on to the post-Communist countries of Europe and Asia in the early 1990s. However, such liberalization, privatization, and tax reforms in fact created serious instability, inequity and inefficiency, because they were carried out without the regulatory and legal frameworks, and government rules and structures, that make banking systems, corporate governance, and tax collection work effectively in advanced industrial countries. Some of the most useful applications of NIE are to show what institutions are required to make the standard economic policy advice actually work in practice.

In contrast to the old institutional economics, which was focused on case studies of organization and preference formation, the New Institutional Economics (hence NIE) combines economic theory with the analysis of institutions. NIE is relevant to development assistance in two ways. First, NIE—especially the sub-discipline on the links between governance and growth—provides us with some advice we can give to developing countries on how to improve the incentives facing both public officials and private actors through various types of institutional reform—for example, by improving commercial laws and their enforcement, deregulation, anti-corruption rules and agencies. Second, NIE provides insights

^{*} Research Associate, IRIS Center, University of Maryland, College Park, MD20742. Omar@iris.econ.umd.edu
NIE Approach to Economic Development

into how development assistance should be provided. Should donor agencies provide development assistance themselves or through contactors? If the latter, whom should they contract with: for-profit firms in the donor country, for-profit firms in the recipient country, or not-for-profit firms? Should staff at the aid agency be rewarded on the basis of the performance of their projects?

In contrast to the old institutional economics, New Institutional Economics does not have any disconnect with mainstream economics on the paradigm of the nearly rational, nearly self-interested individual. Rather, the main message of NIE is that economic activity is plagued with transactions costs and collective action problems. These *transactions costs* include uncertainty about the trustworthiness of sellers or borrowers (*caveat emptor*) and administrative costs that are borne to reduce these uncertainties. These transactions costs can be mitigated, and the scope for markets expanded, by establishing appropriate *institutions*, defined as rules and the enforcement of rules. Rules that are written and enforced by the state are called formal rules. Rules that are unwritten and enforced by groups within society are called informal rules.

To take a concrete example, people may not be willing to lend because they don't expect to be paid back. Institutions such as commercial laws providing for lenders to be paid back in the order in which they lent money to the debtor, and predictable law enforcement might increase the willingness of lenders to lend money to borrowers. The market for loans is also augmented by good collateral laws. Similar arguments can be made for the development of equity markets. More sophisticated versions of these arguments can be used to show the potential benefits of group lending in the context of microfinance. In the context of international financial flows, bank fiduciary requirements and corporate governance may reduce financial risks for international investors, as well as the financial exposure of developed-country governments that de facto insure many such investors.

There is no universally accepted definition of NIE but a good one might be "NIE examines the effects of institutions (rules and rule enforcement) on the behavior of rational individuals in environments with uncertainty and other transactions costs, and examines the consequences of this behavior in terms of individual and collective welfare". This would encompass the majority of sub-disciplines of economics and indeed a quick perusal of the papers presented at the meeting of the "International Society for New Institutional Economics" (ISNIE) suggests that papers from most sub-disciplines are welcome in NIE. The extent of the overlap with political economy is vast and depends on whom one asks, but one important distinction between the two disciplines is that political economy is much less concerned with the microstructure of organizations—e.g., whether hiring is meritocratic, which accounting systems are used, how workers and managers are monitored, whether pay is linked to outcomes—which are central concerns of NIE.

The aim of this paper is to introduce the reader involved in foreign assistance to some ways in which NIE can provide insights that help in the design of reform programs. This is not meant to be an exhaustive review of NIE and development—the reader interested in broad and detailed reviews of NIE and development should read the papers mentioned in Appendix B. The paper is organized as follows: I begin by describing Williamson's (1999) hierarchy of institutions: social structure and human motivations that take centuries or millennia to evolve,

political institutions that take decades to gel, legal institutions that take years to be legislated, and the use of law by private parties that can be established over much shorter periods.

Within this discussion I introduce several conceptual ideas and theoretical insights from NIE:

- Transactions costs and the components of transactions costs (informational asymmetries and the administrative costs of reducing informational asymmetries).
- The incomplete contracts problem, which refers to how to design contracts when important variables cannot be observed.
- The principal-agent problem, which refers to how a principal who cannot observe the agent's action, can induce the agent to take the right action.
- The adverse selection problem, which refers to the problem of creating markets where the quality of the goods or the trustworthiness of the participants is in question.
- The collective action problem, which refers to how any rational agent alone would undersupply effort or resources to resolve group problems.

I then turn to empirical methods used in NIE, which are discussed in more detail in the Appendix. I start with cross-country empirics, which involves the study of statistical relationships between institutions and economic performance across countries. I then turn to micro empirics and describe how institutions can be measured by surveys and in-depth interviews. The next method discussed is analytic narratives, which combine theoretical models with rich description. Finally I discuss experiments, which are now entering the mainstream of economic analysis but have only begun to be applied to institutions.

Throughout this paper I will use four subjects to demonstrate the methods and insights of NIE: finance and development, education reform, decentralization and the delivery of foreign assistance.

The application of NIE to finance is broad and Williamson's schema can more or less be traced from beginning to end in this context. Social structure—itsself affected by the structure of production, climate, colonial origin and inequality—may have affected the development of political institutions. These political institutions and social structure affected legal institutions like commercial laws and the enforcement of these laws. The commercial laws, in turn, appear to have augmented the development of capital markets in both debt and equity. All kinds of methods have been used in the analysis of NIE, finance and growth: theory, cross country empirics and micro empirics. Research so far has already provided important insights and can be effectively used for policy advice but much work remains to be done.

NIE also has important insights for education. Should schools be run for profit, as not-for-profit institutions or by the state? Should parents have the right to opt out through vouchers? Should schooling be free? Should teachers be tested? How should students be tested? Should teachers' salaries be linked to students' performance? Is there corruption in the educational sector and what are its effects on enrollment and performance? To what extent are teachers hired on merit and how much does meritocracy in hiring affect students' performance? NIE can help answer each of these questions.

On decentralization, NIE can help organize our thoughts on whether and why we should expect improvements in public service delivery following decentralization. Like political economy, NIE admits the importance of political disciplines on local governments. The extent to which the propensities to vote and follow local news on the media are linked to effective local government are important questions for both NIE and political economy. In addition to political economy, NIE also focuses attention on the micro-structure of local governments and addresses the links between accountability and meritocracy in local government departments and the quality of service delivery.

Insights from NIE are also directly relevant to how foreign aid should be provided. Should donors provide it directly, through private firms or through NGOS? Should they contract with organizations in the donor country, organizations in the recipient country or with pairs of organizations? Should agency workers be rewarded on the basis of the performance of their projects? If so, should the agency use objective or subjective evaluations?

The reader would benefit most from reading this paper by answering the following four questions at this point, and doing so again after finishing the paper.

What are the links between social institutions, political institutions, legal institutions and economic performance?

Should there be incentives for teachers? For aid officials?

How should development policy makers respond to problematic social and political structures?

2. A hierarchy of institutions: social structure and human motivations, political institutions, legal institutions and economic performance.

Several layers of institutions are important for institutional development and economic performance. These layers, from the slowest moving to the fastest moving are: human motivations and social institutions, political institutions, legal institutions and private institutions (Figure 2).

Figure 1. A Hierarchy of Institutions (Williamson 1999)

Human motivations	Evolve over millennia, only partially adapted to modern society (Pinker, Ridley). Not really an institution but important in determining institutional structures and the effectiveness of institutions.
Social structure	Evolves over centuries. Medieval social structures in Italy are closely related to modern social structures and economic performance (Putnam).
Political Institutions	Take decades to gel. Democracies laid the foundations of property rights and protecting citizens and merchants from the state (North, Olson).

Legal Institutions	Take years to be legislated from thought to finish. Establishing the rule of law (including its effective enforcement) can take longer. The impact of democracy on corruption is much clearer for stable democracies that have been democratic for several decades (Treisman).
Private Institutions	Contracts can be negotiated over weeks even days.
Resource allocation, economic activity and welfare	

While there is an extent to which all these institutions are endogenous, there are two reasons why we ascribe causality from social structure to political institutions, political institutions to legal institutions, and legal institutions to the use of law by private parties. First, an institution that changes more quickly is more likely to change in response to a slow-moving institution than vice versa. Second, there is a clear sense in which political institutions (like legislatures and executives) affect legal institutions (like laws and their enforcement); and legal institutions (like commercial laws) affect how private parties use these laws.

3. Human motivations and social structure

Let's begin with human motivations and social structure. These include the extent to which:

- people in society care about each other's welfare;
- citizens are imbued with civic virtue that motivates them to follow politics and vote in elections; and
- public officials and school teachers are motivated by something other than wealth maximization.
- the social networks that exist among people in similar professions and across classes and professions,
- and the extent of ethnic diversity and income inequality in society.

Human motivations and social structure are perhaps the hardest for development assistance to change. Yet they are fundamental because the bedrock of development in the establishment of social order, and the possibility of social order depends on beliefs, motivations and social structure. While human motivations and social structure are stubbornly resistant to change, we would be well advised to craft political and legal institutions that are well suited to the cultural norms and administrative technology actually prevalent in societies.

Human behavior evolved over the late Pleistocene and has probably only imperfectly adapted to modern life in the few millennia since the establishment of civilization. The motivations that guide our behavior are therefore those which might have evolved over the hunting-gathering stage of human existence (Pinker 1997, Ridley 1998, Wilson 2000). Human beings may therefore be quite skilled at detecting defections from public enterprises (like hunting large beasts) and motivated to punish those who defect. Indeed, as modern-day experiments

suggest, human beings do have a strong sense of fairness and a willingness to punish those who we think have wronged us. Human beings may also be adapted to be internally motivated to take part in decisions that affect their well-being and the well-being of their group. While the large numbers of people who vote continue to surprise rational choice theorists, who assume that voting is psychologically costly, this does not surprise anthropologists, who are aware that people in primitive societies will attend tribal meetings as a matter of course and don't consider them costly.

In his eloquent new account of development "Development as freedom" (1999), Amartya Sen has argued that human beings define themselves and are motivated by what they do as much as what they consume. Rather than merely using our capabilities to earn wages and consume goods, we also use our entitlements to develop our capabilities. Excelling at using our capabilities gives us as much satisfaction as consuming goods. Even though it may be cheaper to give large welfare payments to the handicapped rather than make every building wheelchair accessible as a way to maintain the consumption levels of the handicapped at reasonable levels, this may not be the optimal way to organize society, because it ignores the satisfaction the handicapped can get by doing their jobs well. In the context of development this provides an argument for "trade not aid" or at least "open markets and institutional reform not handouts". People in developing countries are better off with access to foreign markets and the chance to be productive rather than merely getting hand outs.

Economists' narrow view of human behavior that people are rational and selfish is useful when designing private institutions but not always helpful for the design of political institutions. People do vote and in some societies civil servants do not take bribes when they are offered. An empirically grounded theory of human motivations that is consistent with evolutionary arguments and makes useful and generally accurate predictions is sorely needed, but is no where near completion.

One reason why such a theory is needed is to improve our understanding of social order. As mentioned above, the foundation of social order is the bedrock of development and is contingent on the citizenry being politically engaged and willing to play fair. North, Summerhill and Weingast (2000) have an excellent theoretical statement on the foundations of social order and its application to the comparative development of North America and Latin America. Social order consists of

1. A shared belief system about the rights and privileges of private parties and public institutions
2. The clear statement of these rights and privileges
3. Implicit or explicit incentive structures that prevent officials from exceeding the bounds of their authority –these include limited benefits from deviations, and fear of reprisal
4. A clear and shared understanding on the part of the population of what constitutes a deviation from expected behavior, and a willingness to rebel or retaliate
5. A shared understanding of the legitimacy of rules and a widespread willingness to follow them, so that deviations are rare and can effectively be punished

Less dramatic versions of 4. could place some checks and balances on other branches of government, but there is some ultimate sense in which the answer to Juvenal's question "*Quis*

custodiet ipsos custodes?”¹ is that a shared belief system among the citizenry about acceptable and unacceptable behavior by the government and a willingness to punish an errant government is needed to keep the government honest.

Constitutions inspired by the US constitution were adopted in Latin America but largely failed to firmly take hold. The North American experience with self-government in the British colonies had led to a shared belief system about the proper role of government. This, combined with the federal system, which made states compete with each other, limited the extent to which government would try to grab assets. A peaceful and prosperous equilibrium was thus maintained till the civil war. Latin America, by contrast, had little experience with democratic self-government until the 19th Century, and found that constitutions unsupported by belief systems and civic virtue, could neither constrain governments nor keep the peace.

The reason that military coups are unthinkable in developed countries is that soldiers would not accept certain kinds of orders, even from their direct commanders. The oaths of allegiance soldiers take are not dissimilar. It is a belief system on what is right and what is wrong that is the foundation for a reliably democratic social order. One of the reasons for the frequency of military takeovers in Pakistan is that there isn’t a clear, unambiguous and strong antipathy to military governments. Members of the armed forces are never socially shunned because of their involvement in military takeovers. Most Pakistanis would prefer a democracy but the strength of their feelings isn’t strong enough to prevent military takeovers.

One of the insights in the work of North, Summerhill and Weingast is that in societies where there is a weaker consensus on what actions governments should and should not do, and a less engaged citizenry the role of government should be limited. While proactive government may work in Nordic countries, expanding the role of government elsewhere is likely to lead to pathological misgovernance. The optimal level of anti-trust activism and the complexity of competition policy are perhaps lower in developing countries. Changing belief systems themselves while important is outside the scope of what aid project and donor assistance can reasonably achieve—with a few caveats listed below. Crafting political institutions that can be realistically sustained by the available civic virtue is a more useful activity.

Casari and Plott (2001) have an excellent experimental paper demonstrating how human vices such as spite might be harnessed to improve outcomes. They replicated a centuries-old institution used to protect common property resources in the Italian Alps, in a classroom laboratory. This system, called “carte de regola,” rewards the discoverer of a violation with part of the fine charged to the violator. This effectively harnesses the behavior of spiteful agents, who spend resources identifying violators rather than over-consuming, which they would otherwise do. Casari and Plott find that there are spiteful agents who willingly engage in finding and punishing violators even when incentives aren’t strong enough for strictly rational agents to do so. When incentives are sharpened to the point where even strictly rational agents would spend resources identifying violators, the efficiency of outcomes sharply increases. One important lesson from this experiment is that rather than try to change human nature, smart institutional design should harness both selfishness and other morally questionable human qualities, such as ambition and spite, for socially useful purposes.

¹ But who will guard the guardians?

Recent empirical research has linked history and geography through their effects on social structure to modern legal and political institutions (Easterly 1999, Engerman and Sokoloff 1998). The comparative advantage of certain regions at producing certain kinds of goods (sugar, cotton) which had economies of scale in production, led to large inequalities in land, income and wealth. Inequality, in turn, appears to affect several of the proximate causes of development, commercial laws, the rule of law, education levels and trade openness, and consequently economic performance.

More democratic belief systems may also be embodied in some religions rather than others. Protestants may disapprove more of corruption for two reasons. First, one of the founding principles of Lutheranism was a protest about corruption. Second the less hierarchical structure of Protestantism may have led to a greater willingness to question authority. Together this might have led to less corruption in predominantly Protestant countries. Weber's insight about Protestantism might be paraphrased as "protestant ethics, which preach the virtues of both hard work and civic involvement, lay the foundations for good and honest government, which in turn provides the legal institutions that hard working people need to create prosperity". Indeed, econometric results do suggest that countries with predominantly protestant populations have less corruption and more stable democracies than other countries.²

Some policy makers are disheartened by such findings. History and geography cannot be changed and large-scale conversions to Protestantism are not a feasible solution to the problem of development. But these findings do not imply that colonial origins, comparative advantage in producing certain goods, or religious makeup are destiny. They merely state that these things are correlated with the proximate causes of development today. A society that chose to improve its performance on the proximate causes of development and enact better commercial laws, reliably enforce laws, educate its population or perform sensible land reform would reap the fruits of this labor, irrespective of its colonial origin and religious makeup. Indeed, some countries of French legal origins have reformed their commercial laws and found that this led to improvements in financial development. Men can make their own history even if not in circumstances of their making.

The starkest example of social structure having an important effect on outcomes but not being destiny, might come from the emergence of constitutions and democracy in Britain and Ancient Greece. In each case there was no one person with the overwhelming military superiority needed to be an unchallenged ruler. Such a situation can easily lead to anarchy but in both these cases an agreement among powerful interests led to the creation of a political system that led to the underpinnings of prosperity. This holds valuable lessons for some developing countries where power oscillates from one group to another who take turns plundering the economy rather than providing the foundations of shared growth.

A society could, for instance, leverage its civic virtue to improve governance. Swamy et al. (2001) have found that women disapprove of corruption more than men in most countries, and that countries where women are more engaged in market work and public life have lower levels of corruption. Moreover, empowering women at the level of the household leads to

² Treisman 1999, Lipset and Lenz 1999, Clague et al. 1996

increases in expenditures on health and education, and this may also be true at the level of government. Mala Htun has found that female parliamentarians in Argentina are more likely to be members of health and education committees and introduce legislation on health and education than men. This suggests that societies should be able to leverage their existing civic virtue by removing the barriers that prevent women from engaging in public life. This is an important lesson for the international community as it begins its efforts for the reconstruction of Afghanistan.

One term that has become the popular way to refer to social structure in policy circles is social capital. In his classic on sociology “Foundations of social theory” James Coleman defines social capital as that part of social structure that affects economic performance. Coleman never specifies that the effect must be direct and not operate through the quality of governance but his tone and examples suggest that he thinks the effect must be (or at least often is) direct. Coleman articulates why this is a useful concept and why social structure can be a factor of production like physical or human capital.

But this begs the question of what to do when social capital is lacking, and it is here that the concept of social capital flounders. The word capital seems to suggest that it is something we can and should try and accumulate. People have suggested that we should, sitting in Washington, try and build social capital in the far reaches of the World (Serageldin 1998 among others). This is an act of great hubris. We are barely competent after all at judging which rules work best for governing international capital flows, which infrastructure projects would have net positive payoffs, or how best to regulate natural monopolies; the creation of social capital seems a significantly more complicated process, that requires a lot more local knowledge, and local trust than we are likely to have either in Washington or on our trips abroad. International development agencies have no comparative advantage in changing social structure, and have at best imperfect understanding on the consequences of changes in social structure. Networks can be used for good or ill, and (with the few caveats listed below) attempts at transforming social structure are as dangerous as they are optimistic. We should certainly worry about how we may destroy social capital, for we can easily destroy it, but our reactions to societies lacking in social capital should not always be that we try and build it. What, then, should we do?

It seems more reasonable to try to design structures of government that are appropriate for a society’s social structure and cultural norms. For example, if people trust one another we may want to design a more limited state since it is the state we fear and not one another; on the other hand, if we don’t trust one another but have an active civic spirit, we may design a more investigative and powerful state, as we can by our oversight keep the state from overreaching its bounds. The examples on gender and corruption, and harnessing the motivations of spiteful agents to improve rule obedience, also show how good institutional design—which often benefits from donor assistance—can use existing human motivations to improve the quality of governance.

Finally, it would be an exaggeration to state that we can do nothing to affect human motivations and social structures in our lifetimes. In many societies people spend a significant proportion of their lives in public schools. Values can be and are implanted in public schools. Good public schools systems that provide access to all citizens to augment

their human capital also provide an approximation to equality of opportunity, and thus legitimacy to market based systems that might produce large inequalities in outcomes. Broad-based education that serves the large majority of the citizenry, is almost necessary for producing governments that are both legitimate and sensible. No one but the people can be trusted as the ultimate guardians of their welfare, for fear that any one else would subvert government for their own ends. But entrusting the people with their own welfare is much more likely to lead to sensible policies if they are generally educated. For all these reasons, broad-based education is essential for well-functioning societies. This may or may not imply it should be publicly provided, but if the private sector fails to provide it then it does become an important public responsibility to do so. In fact the private sector does not provide education to a majority of the populations—or anything approaching a majority of the population—anywhere.³ Thus the public sector must provide good broad based education if a society is to develop economically and politically. This too does not mean education must be provided directly by the public sector. Education could be publicly funded and privately provided, but this raises important sub-contracting problems and may not avoid the well-known inefficiencies of public provision.

Education is not the only way of improving on a society's social makeup. Microfinance projects that insist on building networks between borrowers often succeed in doing so and also in enlightening their clients about planned parenthood and birth control. Land reforms and other forms of redistribution might improve a population's trust in government and reduce crime rates. Yet men will never be angels. The goal of political society and institutions is to harness the selfish and occasionally even spiteful motivations of human beings for socially productive ends.

4. Political Institutions: Democracy, the Separation of Powers and Decentralization.

I now turn to the second set of institutions in the schema: political institutions. Political institutions consist of the methods of selecting the government (dictatorships and democracies), the separation of powers within government (whether the executive, legislature and judiciary are separately elected and de facto independent of each other), the extent to which citizens can participate directly in rule making through referenda, how powers are assigned to federal and local governments, and the existence of a free press.

The historical work of North (1983, 1990), Olson (1993) and others has argued that democracy creates the political foundations of secure property rights. Indeed, it seems that democracy was created to protect the rights of merchants and nobles from expropriation by the king. Citizens are likely to vote out a government that systematically violates property rights; indeed, no government facing democratic political disciplines has ever abolished private property. Recent econometric work has shown that property rights are more secure in democracies than autocracies, and corruption levels are lower in stable democracies.⁴

³ There is a lot of privately provided education in developing countries in the sense that the well-educated elite is typically privately educated and many teachers give private tuitions. Yet the point remains that the private sector does not provide education to a majority of the population, even when it is not seriously discouraged from doing so.

⁴ Clague et al (1996), Treisman (1999).

Besides the question of whether or not elections are held, there is the issue of how many elections are held. Separate elections for the executive, legislature and even other branches of government like the attorney general may help keep governments honest. The introduction of the long ballot, where citizens directly choose a large number of public officials was part of the reform of local governments, which transformed local politics in America from generally dishonest to generally honest. In almost all developing countries the attorney generals at all levels of government are appointed by the executive. There, officials have—to put it politely—weak incentives to investigate the executive branch. Corruption, which is a criminal charge, can only be prosecuted by the attorney general's office in many countries and consequently corruption cases against sitting governments are rare. In the U.S., by contrast, 44 out of 50 states have directly elected attorney generals. These officers are not beholden to the executive branch and may even have positive incentives in terms of their political careers to successfully conduct high-profile investigations. Once cases have been filed and facts found at the local level, even a politically appointed attorney general in the federal government can't not allow cases to be properly prosecuted in federal court.

In many countries, powers are not even separated between the executive and the legislature. In Indonesian local elections, citizens only vote for a party, the party has a list of candidates who get a seat in the council depending on their order on the party list and the fraction of votes their party gets. The party list can be changed after the election! When the members of the council finally take their seats, they vote for the mayor (Bupati). Reports suggest that each stage of this process is corrupt: would-be councilmen pay for positions on party lists, would-be mayors bribe councilmen for votes. Such practices are so prevalent that the Indonesians have coined a word for them: “money-politics”. There are also reports of other forms of legislative corruption, in voting for laws and in voting on the budget. Citizens feel disconnected from government as they never vote for any one person they can hold accountable. Survey results indicate that Indonesians would not vote for the same mayor the local council elected and that they think that the quality of government service would improve if the Bupati was directly elected. Some democratic systems are better than others at aligning the incentives of politicians with the interests of voters. Electoral reform could significantly improve Indonesia's governance.⁵

Improprieties in campaign finance are a frequent and serious cause of misgovernance. The problem lies in the choice between privately financed campaigns, which lead to unsavory quid pro quos, and publicly financed campaigns which would favor the incumbent. The solution may lie in a system of electoral lotteries, financed by the government which combine the ability of the market to gather information and the ability of the public sector to raise revenues. The government could put up a certain amount of prize money and offer lottery tickets for various candidates, which could be redeemed if the specified candidate won the election. As an illustrative example for the U.S., the U.S. government could auction off lotteries worth \$ 100,000,000 a month starting a year before the election. The sum total of costs would be \$1.2 Billion, which is small change for the U.S. treasury. The price of the

⁵ Robert Cooter will discuss such ideas at greater length in his paper on Political Economy.

lottery tickets would signal that people thought there was a non-trivial probability the person would win the election, or perhaps that people support the candidate and are buying the lottery tickets as a form of contributing to the campaign. To prevent prices being set by a few players in the market, the government could limit the number of lottery tickets any one individual could buy at \$1000. Thus the price would reflect the probability that the 100,000th buyer placed on the candidate (if buyers were ordered by the prices they were willing to pay). With an appropriate cap the money raised by the sales of tickets for the candidate would go to the candidate. All other forms of campaign financing could be prohibited. The auctions would generate much interest in the press and financial markets and might actually help citizens focus on politics. The sums of money involved for other countries would be much smaller and the period over which the auctions are conducted would also typically be shorter in line with the shorter campaign periods in developing countries.

Another important dimension of political design is the extent to which powers are concentrated in central or local governments. The political experience of the United States gives cause to be hopeful for local government. Citizens are interested in local politics, they follow local news and vote in local elections. Labor and capital are mobile across jurisdictions, keeping local governments honest and efficient. However, these political disciplines appear to be weak in the developing countries we have studied (Azfar, Meagher and Kahkonen 2001, Azfar and Livingston 2001). In Uganda, a majority (70%) of citizens rely on community leaders for their information on local politics which may weaken political disciplines on local government. In the Philippines too, far more people use officials as a source of their news on local politics than is the case for national politics. In both countries, broadcast media is a more important source of information on politics than print, which indicates that the independence of the broadcast media is at least as important as the freedom of the press. In both countries, the propensity to vote and the reasons for voting are no better for local politics than for national politics. Cross-jurisdictional mobility is not driven by service provision in either country. In developing countries it seems that the presumptive political disciplines that are supposed to keep local governments honest are weak or absent. Indeed, of the 336 corruption cases in the Philippines current in mid-2000, nearly half (49%) were against municipal mayors (Batalla 1999).

Another piece of evidence suggesting the newfound enthusiasm towards decentralization may be misplaced is that cross-country regressions on the link between decentralization and corruption fail to find consistent results. Fisman and Gatti (2000) find that countries where sub-national governments control a larger share of expenditure are less corrupt, but they acknowledge this could be driven by reverse causality, as the central governments in highly corrupt countries are unlikely to devolve expenditure authority to local governments. Treisman (1999), using a typology created by political scientists ranking some states as federal and others as unitary, finds that federal states are more corrupt.

Theoretical results on decentralization are even more pessimistic. Bradhan and Mookherjee (1998) have pointed out that local governments may be more susceptible to capture by elites. Anyone familiar with the politics of rural Sindh would recognize their concerns. Moreover, vertical externalities between overlapping levels of government can increase public expropriation of the private sector to truly inefficient levels, as each level of government tries to maximize its take from the private economy. Azfar and McGuire (2001) have shown that

even devolving authority from a rapacious autocracy to perfectly democratic local governments may not improve outcomes, because the central government would be so intrusive that the democratic local government would voluntarily decide not to engage in economic activity.

One possible policy implication of these findings is to urge caution on the pace and extent of decentralization. Another is to provide technical assistance on building institutions that are complementary to decentralized governance. These include the development of human and physical capacity in local governments, the development of good accounting systems in local governments, the development of capacity in the local media and NGOs to monitor local governments, and systemizing the use of surveys to elicit information on the needs of citizens and their rating of local government performance. Finally, research on public-private partnerships and community involvement in the provision of local public goods suggests that local-level governance can be improved if citizens become intensively engaged in local government (see also section 6.4 of this paper).

5. Legal Institutions: laws and their enforcement.

The two fundamental theorems of welfare economics state that markets can achieve Pareto-efficient outcomes and that any Pareto-efficient allocation of goods can be achieved by some initial distribution followed by trade. These are powerful results which, when contrasted with the inefficiencies of state-led development, provide strong arguments for markets. It is now increasingly well understood how these theorems in fact provide an important positive role for the state. It is, after all, trade that is both voluntary and reliable which leads to these efficient outcomes. In the absence of the protection of property rights, many exchanges would not take place and markets would remain primitive and stunted. Reliable law enforcement is an important, indeed essential, public good that the state must provide to encourage economic development.

Phrased differently, the rule of law—which means that the rights and privileges of merchants and other citizens are clearly defined, impartially interpreted, and consistently enforced—is important to encourage economic activity. Creating the rule of law, however, is a non-trivial task. The actual demands on a legal system before it can reasonably be said to be governed by laws not men are sophisticated and complex.⁶

Of all laws, commercial laws, which lay the foundation for the development of capital markets, are perhaps the most relevant to NIE. Commercial laws include collateral laws—which define the relationships between lenders and borrowers in debt markets—and corporate laws—which define the rights of shareholders in equity markets. Collateral laws and corporate laws are important for augmenting the markets for loans and equity, respectively (Azfar, Matheson and Olson 1999; Levine 1999). Perhaps even more important than specific laws is the quality of law enforcement. In all likelihood it is the enforcement of good commercial laws rather, than their mere existence, which encourages lenders to trust others

⁶ Summers (2002) lists 18 requirements that must be satisfied by a legal system before it can become a law based system.

with their money. Without the basics of law enforcement, merchants would even be reluctant to engage in spot transactions and fear for their very lives. Both good laws and their reliable enforcement are needed to augment markets. Indeed, law enforcement had a much larger effect on the development of capital markets than commercial law, and law enforcement has an independent effect on economic growth as well as an effect through the development of capital markets.⁷ While there is some indication that commercial laws have a larger effect on the size of capital markets in countries with better law enforcement, there is not enough data to see this clearly. Another limitation of the empirical work is the difficulty of identifying exactly which laws are the best for capital mobilization. It is possible to identify British corporate law being better than French, but difficult to tell exactly which laws are the most important ones with the amount of data currently available. It would be worthwhile to collect data on market capitalization and commercial laws for more countries to investigate these interesting and important questions.

“Justice delayed is justice denied” is an insightful aphorism on the needs for efficient justice. One of the most important weaknesses of many judicial systems is the years and even decades it can take for cases to be decided. Delays in justice in India are connected with poor economic performance and persistent poverty. I know anecdotally from Pakistan that land and rental markets are particularly badly affected by slow-moving justice. While focus has shifted to improving the speed of judicial decisions, the engineering approach taken by the “helicopter drops” of computers and equipment misses out on the perverse incentives of the participants: litigants who don’t want cases decided and bribe judges to delay judgements, lawyers who are paid by court appearance, and so on. Legal reforms that placed limits on the numbers of adjournments and reasons for adjournment might have a larger impact on improving the speed of justice.

The direction of causality between legal and political development may not be unidirectional. If, for instance, corruption or malfeasance prevents elections from being fair even if they are nominally free, a society cannot be properly democratic. Just as contested political markets may underlie the rule of law, reliable law enforcement may underlie genuinely contested political markets. Similarly, the absence of the rule of law can allow the harassment of members of the opposition—and in systems with the separation of powers, of other branches of government. In Russia, for example, judges who attempt to circumscribe the actions of the government find their electricity supply becomes strangely unreliable. More generally, in societies where the quality of public services is uncertain and people rely on personal favors, the government can unduly influence people in the media, judiciary and opposition and undermine the effectiveness of formally democratic institutions.

Corruption—often defined as the abuse of office for personal gain—has significant overlap with poor law enforcement. There was for a long time heated debate about whether corruption helped or hindered development. Famous political scientists like Huntington (1968) and Leff (1964) argued that in the absence of corruption there would be even more severe constraints on commerce. In an article entitled “Economic development through bureaucratic corruption” Leff wrote “the only thing worse than a corrupt over-centralized bureaucracy is an honest over-centralized bureaucracy.” Myrdal (1968) provided an early

⁷ See Azfar, Matheson and Olson (1999).

dissent from this position, arguing that corruption undermines the positive role a state must play in development, and that one of the causes of over-regulation may be corruption itself. After serious empirical work began on corruption in the 1990's, economists have converged to Myrdal's position. For instance, Lee and Azfar (2001) have shown that trade restrictions are more persistent in countries with high levels of corruption. The emerging consensus is that corruption does in fact undermine economic development.⁸

There is significant conceptual overlap as well as causal interactions between corruption and other dimensions of misgovernance. As a practical matter this makes it difficult to trace the cause of some poor socio-economic outcome back to corruption rather than to some other form of misgovernance. Corruption levels are highly correlated (inversely) with bureaucratic quality and the rule of law, which makes it difficult to identify which aspect of misgovernance is the culprit. However, because causal links between corruption and other kinds of poor governance—like poor bureaucratic quality—are both presumptively likely and occasionally even empirically identified, it may be reasonable to state that corruption is responsible for some socio-economic pathology, even if the effect of corruption on the relevant outcome cannot be econometrically disentangled from other measures of governance.

This brings us to the question of how we might reduce corruption, or more generally how we might create the rule of law in developing countries. These are difficult questions. The reform of actual laws is relatively easy, the creation of the rule of law much more difficult though probably more useful.

Yet the beginnings of an understanding to these difficult questions are beginning to emerge. Stable democracies lead to more secure property rights and lower levels of corruption.⁹ The separation of powers between the law enforcement branch of government and the executive may also reduce corruption. While donors can only play a major role in these areas at rare constitutional moments, donors can help materially in the following issues. The rule of law can be improved by several mechanisms like the dissemination of laws in the press and on the internet, by allowing parties to agree to binding arbitration and private repossession of property following court judgments, and by restricting the reasons for granting adjournments of court cases. Deregulation and simplifying licensing procedures which remove the leverage to demand bribes may reduce corruption. Clear expenditure tracking from the central government, through local governments all the way down to delivery points appears to reduce corruption (Ablo and Reinika 1998), and the use of report cards on local governments may improve their performance.

6. Private Institutions: Dealing with transactions costs in incomplete contract, principal agent and adverse selection problems.

⁸ See Azfar, Lee and Swamy (2001) for a review. Corruption has been shown to lead to lower investment (Mauro 1995), slower growth (Knack and Keefer 1995), misallocated resources (Mauro 1998), poorer health and education outcomes (Gupta et al., 2000 and Azfar and Gurgur 2001), and more restrictions on international trade (Lee and Azfar 2001).

⁹ Treisman 1999, Clague et al. 1996.

Perhaps the most interesting advances in economic theory have been on understanding how organizations try to minimize transactions costs (asymmetric information and the administrative costs of dealing with asymmetric information). We consider three such problems: the incomplete contracts or “hold-up” problem; the “principal-agent problem”; and the adverse selection problem. We conclude the section with a discussion of the collective action problem in managing common property resources. While the insights developed here are most clearly stated in terms of private institutions, they are also relevant to the design of political and legal institutions—as shown by the discussions of the delivery of foreign aid and of corruption in this section.

6.1. The incomplete contracts or hold-up problem

Quite often the quality of traded goods is not verifiable by a court of law. This effectively means that parties cannot contract on the quality of a good, and parties to a contractual relationship must therefore rely on “*incomplete contracts*”. Take the example of a businessman who is thinking of setting up a sugar mill in the middle of a large sugar farm in rural Sindh. Sugar cane—unlike refined sugar—is quite expensive to transport, so there are economic gains to be had from locating a sugar mill in the middle of the farm. If the mill owner could write long-term complete contracts with the landlord and retailers in Karachi for the price of good quality sugar cane and refined sugar, he would make the investment. However, the quality of sugar cane is not verifiable in Pakistani courts, so such a long-term contract would be counterproductive—he would just be sold poor sugar cane.

The businessman must thus decide whether in the absence of a feasible contract he should still situate his sugar mill in the middle of the feudal lord’s farm. The problem is that establishing the sugar mill involves large fixed costs. Once the mill is constructed, the farmer knows the businessman will be willing to pay a high price for the sugar cane because the high transport costs have effectively made the farmer a monopoly supplier. The farmer can therefore “*hold-up*” the supply of sugar cane to the mill owner. The mill owner anticipating this does not invest, and the sugar cane has to be transported long distances.

Figure 2: The hold-up problem

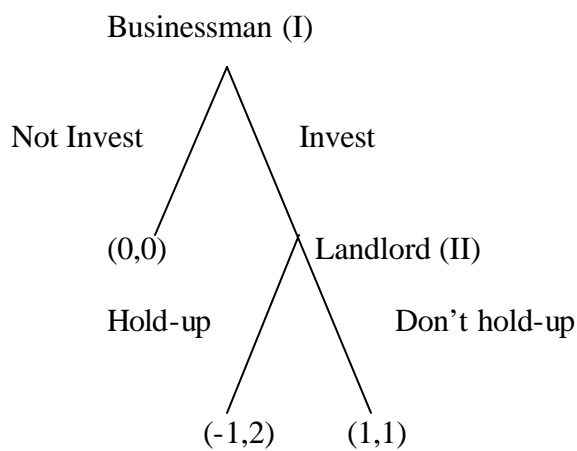


Figure 2 displays the hold-up problem as “an extensive form game”. At the top of the game tree the businessman decides whether or not to invest. In making this decision the businessman tries to work out what the landlord would do following an investment. If the landlord would “hold-up” the supply of sugar cane and insist on the higher price, the businessman would be worse off than not investing—his payoff would be -1 and the landlord’s payoff would be 2 (this is represented by the payoff $[-1,2]$ at the bottom left of the figure). If the landlord would not hold-up the businessman both would be better off than if the businessman chooses to not invest. Their payoffs would be 1 each rather than 0 . However, once an investment is made, the landlord is better off holding up the businessman—he gets 2 rather than 1 . The businessman, anticipating this, decides not to invest.

This is, of course, just one of the many ways that imperfect legal systems hamper commerce. The broader lesson is that in developing countries, where legal systems are less well developed and can verify fewer clauses, or judicial delays have made access to courts impractical, or poor roads worsen the ex-post monopoly concerns, the hold-up problem is more severe and less investment will be undertaken.

Economic theory has in fact come up with clever solutions to some kinds of hold-up problems. For some specifications of the hold-up problem, clever ways of assigning residual rights to profits can resolve the problem. However, if there is “two-sided-uncertainty”—each side can lie about something important—the residual rights can often not be assigned in a way to resolve the inefficiencies, and investment which would have been taken in a world without uncertainty, is foregone (Hart 1995).

One solution to such a hold-up problem is for the miller to buy the farm or the farmer to buy the mill. Thus transforming a market to a hierarchy can potentially resolve the hold-up problem. The central insight of Coase’s Nobel prize winning article “The nature of the firm” and Williamson’s classic “Markets and Hierarchies” is that this might explain the emergence of hierarchies in the first place. However, thus transforming a market to a hierarchy is not always practical and could lead to inefficient outcomes. The landlord and businessman may both be credit-constrained and thus unable to conduct the entire venture on their own. Also the farmer may not be a good miller and vice versa—they could always hire each other but this would lead to principal-agent problems, which we discuss in the next section.

The hold-up problem is also relevant to career paths in aid agencies and other organizations. Because these organizations require specific skills, staff who have worked hard at training themselves would increase their in-house productivity but not their market wage. They would therefore expect the aid agency to “hold-up” their wage increases. Thus, staff would not be motivated to work hard at training themselves. To some extent, contractible things like showing up for training or even taking a test after training can mitigate this problem, but not solve it. One solution for this kind of problem is an “up or out” rule. If this rule can be credibly enforced the agency would have to promote well-trained people or else it would lose them, and staff would have an incentive to use their training opportunities effectively. Up or out rules, however, create other inefficiencies, like losing people who got a decent training but did not excel or else having to promote them. Consider the painful decisions academic departments have to make on marginal cases under tenure review. As up or out rules depend on subjective evaluations, they also raise the specter of influence activities and sexual

harassment—more on these in the next section. Whether up or out rules should be used is therefore a matter of trading off these inefficiencies.

Another kind of hold-up problem arises in credibility about aid conditionality. The international financial institutions often give loans conditional on the performance of recipient countries. These measures of performance were typically macroeconomic, but since the Asian Financial Crisis and the “Indonesian wake-up call”, there has been a focus on governance reform as well. However, conditionalities are often not credible, and more importantly, the ministers of many recipient countries know that due to the incentive structures at the World Bank, the loans will eventually be disbursed. In particular, they know that a Bank team that did not disburse its loans would get a reduced allocation in the future and therefore a smaller administration budget. The ministers therefore do not fulfill their conditionality requirements and deliberately delay budget negotiations till the fourth quarter of the Bank’s fiscal year. They generally receive their loans without meaningful reforms in governance.

NIE suggests solutions to this problem. Bank staff should not be given incentives, implicit or explicit, based on loans disbursed. Second, there should be an external evaluation of whether meaningful reforms were undertaken by a rating company such as Moodys before loans are disbursed. By giving authority to a third party, the bank could precommit to not disbursing a loan if reforms were not undertaken. Together, these measures would serve to improve credibility about the necessity to reform governance before new loans were forthcoming and provide clear incentives to developing country governments to undertake reform.

6.2 The Principal-Agent Problem and Incentive Contracts

The principal-agent problem refers to the problem of motivating an agent to take a particular action when the action is not observable. In broad terms, there are two kinds of principal agent problems. Both kinds of principal agent problem don’t allow the principal to observe the agents action, however there are important differences in the outcomes the principal can observe:

1. In the first kind of problem the principal can observe what he truly cares about –how many shoes are sold- and incentives can closely replicate first best outcomes
2. In the second kind of problem the principal cannot observe what he truly cares about – critical thinking- but only something correlated to it –test scores. In this case incentives can be counterproductive distracting agents from what they would best be doing.

The analysis of the principal-agent problem started with the first kind of problem. The predictions of the theory were optimistic and counterfactual. Not only could the principal induce the agent to take the correct action, he could do it at essentially no extra cost— compared to the situation where the principal could directly observe the action. These predictions were due to the artificial simplicity of the models. Indeed, this was acknowledged early on, but the most useful insights were to come later.

Later analyses of the principal agent problem began with the demonstration that in more complex environments, incentives actually had to be more simple to prevent the agent

“gaming” the incentive scheme (Holmstrom and Milgrom 1987, Azfar 1999). Incentives could depend linearly on outcomes—like shoe salesmen paid a fixed wage—but not be much more complex; and incentives could only be contingent on something closely related to—but not identical to—the principal’s true interests. In addition to this need for simple incentive schemes, the outcome the principal truly cares about –critical thinking- is not observable. (There is also the problem of the principal not knowing what he wants, which is relevant to aid and will be discussed later, but for now let’s assume the principal knows what he wants). The implications of these analyses are less optimistic and suggested incentives are a two-edged sword. Motivating teachers by making pay contingent on test scores may make them work harder at improving test scores, but such incentives would distract them from more valuable tasks like teaching children to think critically or imbuing them with civic virtue. They might even let students cheat. The suggestion of the newer *multi-tasking* literature on incentives seems to be “weak incentives may be useful, and should be based on as broad a set of outputs as possible—use several different types of test scores, on different subjects and both subjective and objective testing methods—but as long as the true objective—critical thinking, civic virtue—is not observable, sharp incentives may be distracting rather than useful.”

One question that needs to be addressed is what we expect teachers to do in the absence of incentives. If they would truly be lazy in the absence of incentives, then piece rates make more sense. However, it is possible that they are internally motivated to teach well. Amartya Sen’s (1999) eloquent and persuasive account of what truly gives us satisfaction suggests that doing things well sits squarely within our utility function. In professions that attract motivated individuals, the case for incentives is less clear. Perhaps, if packaged as healthy competitions—e.g., best teacher awards—they would be motivating, but piece rates might be demeaning and counter-productive. These caveats may however be more relevant to Potomac than Pakistan. In the truly dysfunctional educational systems of many developing countries, where teachers are evidently not motivated, incentives for teachers may be helpful—unless they lead to teachers helping or allowing students to cheat. In developed countries, where educational systems appear to be functioning well, the case for incentives is less clear.

Similar arguments apply even more forcefully to officials in aid agencies. It’s quite unlikely that the variable the principal ultimately cares about is verifiable or even observable—in the best case scenario, we could assume that the principal is some well-defined person or institution in the government of the donor country, and both the publicly stated and the actual aim of aid is the long-term economic development of the recipient country. In actual fact, it is often not clear what the principal wants. USAID’s insistence on staff and contractors flying American carriers is difficult to square with its stated commitment to economic development and free trade, and an embarrassment to staff and contractors trying to explain the virtues of free trade in developing countries. More generally Congressional earmarks often reflect the interests of American suppliers, which are only imperfectly aligned with economic development in recipient countries. It’s not even clear who in the government the principal is (the director of USAID? the secretary of state? the president? congress?). This only compounds multi-tasking problems.

But let’s return to the optimistic presumptions for now. It is awfully difficult for USAID or any other donor to measure the impact of an aid worker’s efforts on the economic

development of a country. So we turn to subordinate objectives like improving the educational system of the country. This, too, is hardly feasible to measure, but we would already have multi-tasking problems if we were to link rewards to improvement in the school system. The aid official would like to organize an aid program to improve the education system, even if that is not the most productive use of resources. To the extent that rewards do implicitly depend on such evaluations, there are battles for resources within aid agencies. Explicit incentives would only make things worse. In practice, it would be extremely difficult to measure the impact of an aid official's efforts on anything except some objectively measurable outcomes of a narrowly defined project. This would provide the aid official with incentives to maximize these objectively measurable outcomes—test scores at a few schools in a pilot project—even at the expense of broader concerns with development—like the development of better curricula, critical thinking or civic virtue.

Since there is obvious dissatisfaction with objectively measurable outcomes like test scores, should incentive schemes depend on richer subjective evaluations? While this can mitigate multi-tasking problems, it creates another problem—influence activities. Officials who get rewarded on the basis of subjective evaluations of either their superiors or their clients spend time currying favor with them. Take, as an example, a teacher rewarded on the basis of subjective evaluations by the department chair and the students. He is likely to spend time telling jokes in class, grading lightly, skipping over difficult material and trying to befriend his boss. These influence activities distract workers from what they're actually supposed to be doing and may even annoy his boss and students. Uglier outgrowths of reliance on subjective evaluations are unreported misdeeds of superiors and the like.

In the context of an aid agency, an official may be rewarded on the basis of her boss's recommendation and the evaluations of her clients in the recipient country. This would first create problems with influence activities, like befriending her boss and clients. It also raises more sinister possibilities of sexual harassment and unreported financial misdeeds and corruption. (Why report the financial misdeeds of someone who's giving you a good evaluation? Better to let it pass unnoticed and get a good evaluation). While such flagrant abuses may be rare in USAID which has to follow U.S. government guidelines on financial management and sexual harassment, more subtle forms of influence activities can have serious consequences. Mid-level staff may support senior staff on resource allocation decisions to get good evaluations even when they don't agree with the allocation decisions.

Measurability creates problems with the delivery of foreign aid even in the absence of explicit incentives. The government of a donor country, in its enthusiasm to show its own populations and the population of the receiving country that it is doing good, is likely to focus on visible and uncontroversial forms of assistance with short-run payoffs, like distributing food, rather than those with longer-run returns, like institutional reform. This might actually be quite sensible in countries where donor motivations are treated with suspicion, but the point remains that aid will not be focused on the most valuable kind of programs.

One insight of the principal-agent problem is that there is no need for proof to reduce malfeasance to an efficient level and incentives can be given based on outcomes that are only imperfectly related to actions. In "Investigating corruption" Canice Prendergast—an expert on the principal-agent problem—raises several cautions about punishing people for corruption

in the absence of clear proof. Convictions without proof would lead to public officials trying to keep customers happy (e.g., giving licenses even when they shouldn't), nuisance cases and blackmail. It might even increase corruption, as officials may expect to keep their jobs for less time and adopt a "take the money and run" attitude.

The preceding discussion is meant to raise cautions in the design of incentives, not as a prescription to avoid incentives in all cases. One sector in which incentives could be used but haven't yet been used effectively is in banking to avoid financial crises. Governments often feel the need to bail out failing banks for fear the crisis will spread to other banks. The expectation that they will be bailed out, however, creates moral hazard on the part of banks. Many people believe this moral hazard problem cannot be resolved without creating an unacceptable risk of financial meltdown, but this belief is mistaken. The moral hazard problem could be mitigated by punishments directed at the managers of banks who fail. If individual managers faced sharp negative consequences to bank failure, but most bank deposits were still guaranteed, then the risk of crisis could be reduced.

Democratization and especially decentralization may also create problems similar to the problems created by providing incentives in organizations where multi-tasking concerns are important. Local governments may move resources away from effective public services if they are not as popular as other more visible and better appreciated public services.¹⁰ National governments may be more subject to both international visibility and good technocratic advice and therefore be less likely to do this.

The need to provide incentives may also lead to short-termism and an over-decentralization of responsibilities and resources within aid agencies—it's easier to provide incentives if officials are clearly assigned to certain countries and face hard budget constraints for their missions. This makes it difficult, however, to engage in thoughtful activity at the global level, as USAID is now finding with its work on corruption. It also makes staff focus on short run pay-offs when the most valuable programs may require long-term investments. For instance some staff members reported the following story about an agricultural research program: "Whereas the returns to agricultural research probably remain quite high, the timing of those returns and the nature and timing of the investments needed to achieve them seem out of synch with the short-term focus of the Agency's results reporting framework. For example, in an earlier AID-supported agricultural research effort somewhere in Latin America, the Agency had supported the work of four researchers - for 15 years. At the end of that period, the country had managed to double yields in key crops -- a tremendous return to a very small investment. However, if you asked what concrete results had been achieved after the first five years or ten years, the answer would have been, roughly nothing. He voiced concern that the current results reporting system forces an excessive focus on what can be achieved in the first or second year. Or at the very least, that many missions interpret it that way, and plan their programs accordingly. If that's the case, then even those agricultural research efforts offering the highest potential returns may be systematically passed over."

¹⁰ Like immunizations in Uganda—see Azfar and Livingston (2001).

In summary, we are faced with several problems when designing incentives for aid officials. Objective incentives can only be based on narrowly defined measures like test scores—which would become the focus of attention at the expense of more important variables, such as critical thinking, civic virtue or economic development. Subjective evaluations, on the other hand, induce agents to spend time currying favor with clients and superiors and may even result in inappropriate behavior. A principal must trade off these two inefficiencies and choose the optimal mix of objective and subjective evaluations.

The correct mix of objective and subjective evaluations depends on the nature of the agent's job. If objective measures are not closely related to what the principal wants and subjective measures are, the subjective measures should have more weight. However, if subjective measures are likely to lead to quid pro quos and unreported misdealings, then objective measures might be better. If both problems are sufficiently severe, it might be best to stay away from incentives after all.

The preceding analysis described the problems faced by firms and other organizations and applied these ideas to aid and development. In fact, foreign aid is bedeviled by a host of other important problems (Martens and Murrell 2001):

1. Recipients don't vote in donor countries, which breaks the information—and political-incentive—chain between those deciding what services to provide and those allegedly benefiting from them. Aid agencies and contractors may therefore have the latitude to design aid packages for their own ends.
2. There are several principals within donor country governments—and in the case of multilateral institutions, several countries that are principals. These different principals have different objectives, but often for political reasons it is not clear what the weights on different objectives should be. This leads to both contractibility and multi-tasking problems.
3. Contractors and NGOs have their own agendas only partially aligned with economic development.

Some partial solutions to these problems do come to mind. For instance, in response to the first concern, recipients of aid could be surveyed about the quality of service delivery. The technology of how to measure the quality of service delivery is increasingly well-understood, and is often applied by the World Bank to evaluate recipient country governments. A similar methodology could be used to evaluate donors and their contractors. This would resolve the information problem but not the political incentive problem.

If contractors have their own agendas, these should be investigated and well-understood and they should be awarded projects where their interests coincide with the aid agency¹¹. A project to understand the implications of NIE for foreign aid and economic development should be awarded to a research University. A project to set up an internet provider should be awarded to a reputable private sector firm which, out of concern for its own reputation and

¹¹ I thank Clifford Zinnes for this insight which will be developed at length in his paper on the organization of foreign aid.

profitability, would implement this project efficiently. The general lesson on comparing not-for-profits with for-profit firms is that for-profit firms are more cost-effective but, sometimes in their enthusiasm for cost-effectiveness, cut corners and quality. Not-for-profits do have incentives to control costs but not to minimize them. Potential loss of reputation from shoddy work is therefore relatively more important to saving on costs, hence quality is less likely to fall below threshold (Hart, Shleifer and Vishny make a similar argument for government vs. private provision).

It is worth raising a note of caution about the newfound enthusiasm about not-for-profit organizations. A few years ago, when most NGOs had to compete in the market for donations from several sources—often individual donations—most NGOs were in fact dedicated and efficient organizations. Today, with the wealth of donor funding directed at NGOs, it is possible to run a “for-profit in disguise” and game the donors into getting continued funding. In Indonesia for instance, many people seem to believe that the level of corruption in NGOs is similar to the level of corruption in various branches of local and national government. A serious evaluation of NGO motivations, management practices and malfeasance is critically needed by the international development community.

Projects can also be awarded to pairs of organizations, one in the donor country and one in the recipient country. This has advantages and disadvantages. The advantage is that it combines developed-country expertise with country-specific knowledge of the recipient contractor. This allows the donor agency to implement a project that neither organization would implement on its own by forcing them to compromise (Murrell). By insisting on a cooperative agreement between a U.S. University and a developing country organization, a donor agency may be able to produce a study that is both methodologically rigorous and relevant to economic development of that country. Awarding the contract to one of the two parties and allowing it to subcontract with the other may affect power relations in a way that the product would either not be methodologically rigorous or not relevant to the development of the recipient country. The disadvantages of insisting on such compromise is that it can lead to large administrative costs and it places a possibly lethargic or venal organization in a powerful bargaining position. Whether or not to insist on such compromises depends on these tradeoffs.

6.3 Adverse Selection and Signaling

In the principal-agent problem, a principal designs an incentive scheme to induce the agent to work hard at maximizing whatever the principal wants maximized. In the adverse selection problem, the agent’s type (or the type of project the agent is involved in) is unknown. The idea now is to select trustworthy agents, or agents who would undertake profitable projects, to work with. This point was first made with respect to the market for used cars (lemons) by George Akerloff, for which he received the Nobel Prize in 2001. The problem applies to many different markets, here, we will discuss two: credit markets and labor markets.

Suppose, for instance, that there were two kinds of agents, one who would like to invest in a relatively safe project with positive expected payoffs, and one type who would like to invest in risky projects with negative expected payoffs. A banker in such a market may not find it worthwhile to lend at all. Indeed, before institutional innovations in the forms of lending

started with the micro-finance revolution, lending to entrepreneurs in developing countries was risky business.

Mohammed Younis, an economist at a Bangladeshi University, thought up a way to resolve the adverse selection problem. If borrowers were obliged to borrow in groups, and the entire group suffered from the default of one member, then borrowers would only agree to form groups with others who they knew were safe bets. Thus, as long as borrowers knew each other better than loan officers could be expected to, loans would be taken but only used for safe and profitable projects.

In addition to using group lending for selecting trustworthy borrowers, micro-finance programs also used “dynamic incentives” to induce borrowers to work harder and improve the chances of success of their projects. Dynamic incentives take the form of improved access to credit after successful repayments in early rounds. Americans are, of course, familiar with the need to maintain good credit ratings to gain access to credit in the future. Creating accessible data bases of credit histories in developing countries may be one of the few feasible ways of building social capital. Because of group lending, which mitigates the adverse selection problem, and dynamic incentives, which combat the moral hazard problem, micro-finance programs have had high repayment rates. Yet they are often not profitable, because of administrative costs, and once the administrative costs are accounted for it is not clear how cost-effective they are (Morduch 1999 contains an excellent survey of the micro-finance experience).

Figure 3. Micro-finance: Transactions Costs and Institutional Solutions

Problem	Moral Hazard Borrowers are careless or chose risky projects	Adverse Selection Some borrowers only have access to risky investments
Solution	Dynamic incentives Improved access to credit in the future for borrowers who repaid the first loans on time provides incentives to not be careless, rash or lazy	Insisting on group lending means such borrowers will typically not be allowed into groups, and hence not able to borrow

Another lesson from the success of micro-finance may be the importance of distributing assets widely and providing clear legal rights to assets already “owned” by the poor, so they have collateral on the basis of which they can borrow. In the early years of development economics, when it was widely felt that large projects were the most profitable ones, important economists such as Chenery defended inequality saying that inequality allowed investment in such projects. Now that we realize many small-scale productive activities can be efficiently undertaken, this defense of inequality is no longer sound. In fact, extremes of inequality where many people have no collateral at all on the basis of which they can borrow may be strangling growth in many countries.¹² The growing appreciation of the efficiency of many small-scale projects suggests that the optimal distribution of assets—from a productive point of view—should match this. Cross-country results do find that highly unequal

¹² This is one important point made in the widely read new book “The mystery of capital” by Hernando de Soto. *NIE Approach to Economic Development* 24 2/21/02

distributions of assets are correlated with poorer governance and slower growth. Land reform or the clear assignment of property rights to the little land the poor possess could have significant productive consequences.

One way to mitigate the adverse selection problem is to allow parties to signal their trustworthiness or productivity to others. Perhaps, the best-known example in economics—this one in labor markets—is acquiring education to signal productivity (Michael Spence shared the 2001 Nobel Prize with George Akerloff and Joseph Stiglitz for this insight). This can allow a better allocation of talent to jobs but may result in too much education, especially of the kind that signals productivity rather than raises productivity (like studying Classics at Oxford as a way to get a job in the City of London).

6.4 Collective action problems and common property resources

A collective action problem arises when a group of individuals desires a public good—such as clean air, protective tariffs, law and order, or defense—and no one individual has the means of providing it. The provision of the good thus requires aggregating the contributions of several individuals. The central problem is that each individual would like to contribute a sub-optimal amount, because the benefits of his expenditure will be shared by all. As Olson (1965) famously stated, while small groups can sometimes organize collective action by informal arrangements and peer pressure, large groups typically need formal institutions and selective incentives¹³ to organize and act collectively.

The theory of public goods suggests that the goods will be under-provided by the market and should therefore be provided by the public sector. This conclusion, however, ignores the collective action problem in designing and monitoring the public sector, and public good delivery in developing countries suffers from chronic non-performance. An explicit analysis of the informational problems faced by consumers and government officials suggests that joint public-private production, user fees, and community involvement would lead to better outcomes (Isham and Kahkonen 1997). Joint production provides valuable oversight of public officials involved in public good delivery, and user fees can effectively demonstrate that the public good is in fact being provided. These results, which follow from economic analysis, were applied to the delivery of water and sanitation in India and Sri Lanka, and produced significant improvements in outcomes (Isham and Kahkonen 1998).

Elinor Ostrom (1990) argues that small- and medium-size groups can organize themselves for the preservation and efficient use of common property resources and public goods, and have sometimes done so. These local solutions are often more efficient than solutions that would be proposed by central governments, because of local knowledge about the nature of the problem, which might elicit different solutions, and because these local organizations can be monitored more effectively than a central government. Ostrom contends that central governments need to acknowledge the legitimacy of rules made by local governments and NGOs, and provide the rule of law in the form of courts for interpretation and mechanisms for

¹³ These selective incentives can either be coercive, like fines for non-cooperation, or positive, like access to a union shop.

enforcement.¹⁴ Many of the arrangements Ostrom describes are self-governed and enforced by the group itself, but these groups do seem to have formal structures, and explicit incentives and fines are used to elicit cooperation.

The insights of NIE that cooperation is possible in small groups and that collective action can be effectively organized by the use of selective incentives, can be combined to suggest that allowing small- and intermediate-size groups to create selective incentives, and providing support for their enforcement, can lead to effective solutions for local public good and common property resource problems. Donor assistance can play a useful role in supporting community initiatives of the sort described here.

7. Empirical Methods of NIE.

Having discussed theoretical insights from NIE I now turn to an examination of empirical methods in NIE as applied to development. These methods are described in more detail in the Appendix.

There are four main categories of empirical methods: cross-country empirics, micro-empirics, narratives and experiments. Each of these methods has its limitations, and persuasive answers to questions about the relationships between institutions, or between institutions and economic performance, could productively use several of these methods.

Since many important institutions only vary significantly across countries, *cross-country empirics* is a method particularly well-suited to identifying patterns between different kinds of institutions, or between institutions and economic performance. Cross-country econometrics also has the advantage of generality and of allowing the use of prior knowledge—the samples used in many analyses cover the majority of the world’s population, albeit at an aggregated level, and we can use our prior knowledge about each observation to identify how much faith to place in it. However, cross-country empirics also suffers from several methodological problems: the data are often not constructed in comparable ways, there are potentially serious selection biases, and it is very difficult to disentangle cause and effect. The most frequently used methods to resolve concerns about causality—“Granger causality” and “Instrumental variable estimation”—are often unpersuasive for reasons explained in Appendix A. What then is the New Institutional Economist to do?

It is instructive to ask how scientists would resolve this question. The answers to many interesting and important scientific questions about whether humans are descended from other animals or smoking causes cancer in humans, are not directly observable. Rarely is any piece of evidence a “smoking gun” that answers these questions conclusively in favor of one hypothesis or another.¹⁵ Rather, a painstaking accumulation of a large number of facts is used to make the case. The effects of Carbon Monoxide (CO) on lung cells in vitro, the

¹⁴ I would add the condition “unless they conflict with federal law or the basic principles of justice.” Local communities and non-governmental organizations can sometimes decide to do rather vicious things, and the protection of individuals from these acts is a legitimate role for the central government.

¹⁵ Or, at least, the answers were placed beyond reasonable doubt before a smoking gun like a DNA sequence became available.

identification of similar damage near cancerous growth in smokers' lungs, the effect of exposure to CO to mice in controlled experiments, and finally the demonstration of clear statistical patterns between the propensity to smoke and contracting cancer, have placed the proposition that smoking causes cancer in humans beyond reasonable doubt. Note that this demonstration has been made in a world where it is (thankfully) impossible to run controlled experiments on human subjects (much like the impossibility of randomly choosing countries for institutional reforms).

Economists would do well to learn from this. Cross-country empirics is analogous to the mere demonstration that there is a statistical correlation between the propensity to smoke and the proclivity of contracting cancer. Clear and persuasive evidence needs to be accumulated to corroborate these claims. How is this evidence to be accumulated?

Micro-level evidence on the behavior of firms and households can be used to examine questions about causality. Micro-level evidence can be produced and used in several ways:

- Surveys can be used to study behavior at the level of the household or firm.
- Surveys can also be used to create data sets at the level of sub-national jurisdictions.
- In-depth interviews can be used to investigate reasons for actions, and for reliability checks on surveys.
- Historical narratives can also be used to investigate reasons for actions.
- Experiments can be used to create artificial institutional variation to investigate the effects of institutional innovations that don't occur naturally.

Surveys can be used to construct data bases at the sub-national (provincial, district or municipal) level with data collected in a cleaner and more comparable way than is practical at the cross-country level. Surveys can also be used to identify actions and reasons for actions at the level of the individual, household or firm. For example, cross-country findings may show that increased participation of women in the labor force or parliament is associated with less corruption. Survey results showing that women disapprove more of corruption and that firms managed by women are less likely to pay bribes provide important corroboratory evidence on the possibility of a causal link in the cross-national relationship (Swamy et al.). Information on actual behavior in parliament—committee memberships, introduction of bills and voting—would also provide evidence on causal links.

Surveys have important limitations due to the need to ask simple questions with multiple choice answers and lead to a somewhat ham-fisted analysis of human motivations. In-depth interviews are better at teasing out human motivations but have the disadvantage of taking intensive attention from the lead researcher. The best empirical strategy may be to use both surveys and in depth interviews where surveys provide some information on a statistically defensible random sample and in-depth interviews, are used to validate survey responses, provide anecdotes and understand motivations.

Analytic narratives are one of the most powerful tools for understanding the links between different levels of institutions and economic performance. The term refers to a method that combines neat theoretical predictions (analytic) with thick historical description (narrative). A good researcher can read documents and archival material, interview other scholars and—

for modern day problems—political actors and “seek to understand the actor’s preferences, their perceptions, their evaluation of alternatives, the information they possess, the expectations they form, the strategies they adopt and the constraints that limit their action.”¹⁶ As an empirical method for uncovering causality in social science such research and analysis can be a powerful tool.

An excellent example of an analytic narrative is Avner Greif’s account of governance in Genoa.¹⁷ Genoa was beset with several clans vying and warring for power. The existence of an external threat motivated them to adopt a political system where they hired an outside “podesta” to run their government. The podesta was not only well paid but was given clear incentives to run Genoa well. He had to stay in Genoa and be audited following his reign and was fined for any misconduct. Excellent performance, on the other hand, would improve his chances of being appointed podesta somewhere else. These incentives in Genoa led to good governance, military expansion and prosperity. This is another example of how a society may mitigate the consequences of its poor social structure (warring tribes) by cleverly designed political institutions.

Much as economics has done well to colonize the other social sciences and make them more analytic, economics would benefit from making room for narratives in its own method. Increasingly narratives are seen in economic articles even outside history. An excellent example is Hart, Shleifer and Vishny’s new classic on the “Proper scope of government: Theory and an application to prisons,” which combines the theory of contracts with a detailed narrative examination of the incentives in the prison system.

Another empirical method which has now entered the mainstream of economic analysis is *experiments*. An economic experiment typically involves a number of subjects—often University Students—who play “games” with each other for real stakes (\$). The results of these experiments have been important in casting doubt on long-cherished assumptions of rationality in economics. The handbook by Kagel and Roth (1995) is an excellent compendium of the methods and results of experimental economics.

One important advantage of experiments for the institutional economist is that institutions can be varied in clean and systematic ways in a classroom experiment. The main disadvantage with experiments is the suspicion that players act differently in experimental settings than they would in real life. This concern is partially grounded in the expectation that undergraduates, especially economics undergraduates, are not representative of the population. This concern can be resolved by actually conducting experiments with representative people in developing countries. The deeper concern is that people act differently in experimental settings. Here, emerging evidence from the analysis of questions like choice over time, where experimental results correspond more closely than the predictions of economic theory with observed real world behavior, have given more credence to experimental economics (Laibson 1997). Some recent experiments have direct relevance to NIE, like the paper discussed above by Marco Casari and Charles Plott, who designed an experiment that harnesses human vices such as spite to the production of efficient outcomes.

¹⁶ Bates et al (1998).

¹⁷ In Bates et al, op. cit.

Finally as accepted in the hard sciences, when there is the possibility of a *randomized trial*, this is the most persuasive methodology to use. The public good nature of knowledge suggests that this methodology is not used nearly often enough as described by Professor Kremer's paper. While clearly impractical for macro level analysis, randomized trials can be effectively used for many micro-level projects, which focus on specific schools, clinics or small businesses.

8. Conclusion

What in conclusion does NIE teach the development professional? The main lesson of NIE for development assistance might be that aligning the incentives of agents with the interests of principals, and improving information flows about actions and outputs can improve outcomes. This applies to principal agent relationships in both the political sphere (voter-prime minister-civil servant) and the economic sphere (creditor-debtor, shareholder-manager). It also applies to clear property rights which give private agents sharp incentives to minimize on costs while maintaining quality and to solutions for collective actions like rewarding citizens who detect defectors.

In the political sphere regular and genuinely contested elections, and a free press that keeps the population relatively well-informed, align the incentives of politicians with the interests of voters. Other details of the political system, especially the separation of powers and democracy within political parties, are also important.

In the private economic sphere, collateral laws that clearly state creditors should be paid back in the order in which they lent may help improve the functioning of debt markets. Corporate laws demanding that shareholders have control rights in proportion to their holdings, and that prescribe punishments for negligent or venal managers, might help the development of equity markets. Paying workers and managers in proportion to the profitability of the firm also appears to motivate employees. If designed with care, some form of output-based compensation may even improve the performance of school teachers and other public sector employees.

At this point it may help the reader to reflect upon what he has learnt by returning to the questions asked in the introduction:

What are the links between social institutions, political institutions, legal institutions and economic performance?

Should there be incentives for teachers? For aid officials?

How should development policy makers respond to problematic social and political structures?

Rather than try and provide answer to these questions myself, which would make me repeat myself once too often, I leave it to the reader to come up with the answers.

I conclude with a disclaimer about the limits of what NIE can help us do. Incentives are not a panacea and explicit incentives are not always appropriate. Truly valuable outcomes are often not observable, and using imperfect proxies for these outcomes can sometimes be distracting

rather than useful. Finally, NIE can't help us change human nature. Rather than try to build social capital in societies with problematic social structures, or transplanting developed-country institutions in technically more backward societies, NIE suggests we would be better off trying to design political and legal institutions suited to current realities.

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Appendix A. Empirical Methods of NIE

Having discussed theoretical insights from NIE I now turn to an examination of empirical methods in NIE as applied to development.

There are four main categories of empirical methods

- 1: cross-country empirics
- 2: micro-empirics
- 3: experiments
- 4: narratives

A.1 Cross-Country Regressions

The first of these methods cross country empirics is important in identifying the impact of institutional variation on socio-economic outcomes. Many important institutions only vary across countries –or data is only available at the cross-national level-. Hence cross-country analysis, which allows the identifying patterns between institutions and economic performance, is an important component of evaluating any hypothesis.

Cross-country empirics is replete with methodological problems and some eminent economists like Abhijit Bannerjee believe its of very limited value. The most important of these problems are poor data, selection biases and inferring causality, which we will discuss below.

But before turning to the problems and limitations of cross-country econometrics, it's worth noting its advantages. We have already mentioned the first advantage above –that it allows identifying patterns between institutions and economic performance. Second, for many relationships it's possible to use data covering the majority of the world's population. Hence the relevance of a finding is not limited to any one country. A finding that across the globe countries with higher levels of corruption have worse health outcomes even after filtering out the effects of income, education etc. has greater generality than the finding that corruption affects health outcomes in any one country. If the finding is to be believed, i.e., issues of causality etc. have been resolved, the finding would suggest that corruption in general affects health outcomes in most countries throughout the world. It doesn't show that corruption undermines health outcomes in every country, yet it has more relevance to, say, Kenya than a finding that corruption undermines health outcomes in the Philippines. The advantage to studying countries in detail, which we will describe below, is that the analysis can be done with fewer methodological problems.

Second, in cross-country regressions we have a fair amount of general knowledge about each observation. If we find regression results are driven by one or two observations, our general knowledge about them can offer some guidance about whether or not they should be discounted. So if a regression on the effects of inequality on crime is driven by Brazil and the

USA, our general knowledge on the links between inequality and crime in these two countries may lead us to not discount these observations and to place some faith in the results. On the other hand if the relationship between commercial law and growth is driven by the observation on South Korea, whose impressive growth performance is not clearly caused by the quality of its commercial law, then we may be skeptical of this result. In this case we should re-estimate the equation without South Korea before placing any faith in the result (see Azfar, Matheson and Olson 1999 for a demonstration). A more technical statement of this argument is: “Regression results are often driven by one or two observations, these observations either carry a lot of information or a lot of noise. In cross country regressions our general knowledge allows us to judge whether these observations are informative or noisy and we can use this information to evaluate our results”.

However, cross-country comparisons are not always informative on the direction of causality between any two variables. At the level of countries its difficult to tell whether finance causes growth or growth drives financial development; whether inequality causes poor educational outcomes or poor educational outcomes cause inequality; or whether corruption delays trade reform or trade restrictions lead to corruption. Questions about causality are perhaps best resolved by micro-level analyses but there are two techniques which are often used in cross-country regressions, “Granger Causality” and “Instrumental Variables” which we review below.

One way of resolving concerns about whether A causes B or B causes A is to look at the effect of past values of A on future values of B and vice versa. If past values of A affect subsequent changes in B but past values of B do not predict subsequent changes in A, then it might be possible to infer that A causes B but B does not cause A. It’s important to point out that this is not a general rule. For instance if anticipated future changes in B (economic growth) can effect present values of A (financial development), then demonstrating that past values of financial development predict subsequent economic growth does not show that financial development drives growth.

Another way of resolving the question of whether the causality flows from corruption to trade or vice versa is to use “Instrumental Variables” or “Two Stage Least Squares” (sometimes referred to by the acronym 2SLS). The idea behind the method of instrumental variables is to use some instrumental variable (C) closely related with the independent variable of interest (A), which is presumptively unlikely to be caused by the dependant variable of interest (B) and examine whether that variable (C) is correlated with the dependant variable of interest (B). If it is, then under a set of quite restrictive conditions, it can be inferred that A causes B. For instance if we are examining the hypothesis that financial development causes economic development, we might look for empirical links between commercial laws and financial development, and commercial laws and economic growth. If commercial laws are clearly correlated with economic growth, and with financial development and there is no other plausible mechanism by which commercial laws can affect economic growth then we might reasonably infer that financial development causes economic development (Azfar, Matheson and Olson 1999, Levine 1999). This is pretty much as good as it gets with instrumental variables. Even in such a case there is the worrying possibility that some other unmeasured variable, which is closely empirically related to commercial law might be driving the results – for instance some unmeasured aspect of legal culture could be closely related to commercial

law and directly affect economic growth. Many applications of instrumental variables are more questionable.

To summarize: An instrumental variable C is a valid instrument for examining whether variable A causes variable B if

- 1: C is strongly correlated with A
- 2: C does not have a plausible direct effect on B
- 3: B does not have a plausible effect on C
- 4: There is no D correlated with C and unmeasured which can plausibly cause B

It is generally very difficult to find an instrument that satisfies all four requirements. Many economists use instruments while acknowledging they fail on one of these four conditions. Economists often cite tests for “over-identifying restrictions”, however as some econometricians have pointed out, these tests are not persuasive in the relatively small samples used in cross-country regressions (Nakamura and Nakamura 1985 and Newey 1985). While they have become mainstreamed in the profession, the value of instrumental variable analyses, where the instruments don’t pass presumptive tests for validity, and samples are too small for persuasive tests for the validity of the instruments, is unclear. Economists would do better by looking for other kinds of information to resolve questions about causality from micro-data and detailed narratives. It is to these methods we now turn.

A.2: Microempirics

Given the problems with inferring causality from cross-country regressions, how might social scientists answer important questions about the impact of institutions on socio-economic outcomes and the determinants of good institutions?

It’s instructional to ask how scientists would resolve this question. The answers to many interesting and important scientific questions about whether humans are descended from other animals or smoking causes cancer in humans, are not directly observable. In neither case is there a piece of evidence a “smoking gun” that answers these questions conclusively in favor of one hypothesis or another.¹⁸ Rather it’s the painstaking accumulation of a large number of facts that is used to make the case. The effects of Carbon Monoxide (CO) on lung cells in vitro, the identification of similar damage near cancerous growth in smokers lungs, the effect of exposure to CO to mice in controlled experiments, and finally the demonstration of clear statistical patterns between the propensity to smoke and contracting cancer, have placed the proposition that smoking causes cancer in humans beyond reasonable doubt. Note that this demonstration has been made in a world where it is –thankfully- impossible to run controlled experiments on human subjects (much like the impossibility of randomly choosing countries for institutional reforms).

Economists would do well to learn from this. Cross-country empirics is analogous to the mere demonstration that there is a statistical correlation between the propensity to smoke and

¹⁸ Or, at least, the answers were placed beyond reasonable doubt before a smoking gun like a DNA sequence became available.

the proclivity of contracting cancer. Instrumental variable analysis is little better: an analogous instrumental variable resolution to the question of whether smoking causes cancer would be to argue that people who went to poor schools smoke more, and therefore if a link can be found between being born in a poor school district and lung cancer then smoking must be culprit. If that were the sum of evidence for the proposition that smoking causes lung cancer then we would have found it difficult to generate the breadth of scientific consensus on the issue that made even cigarette manufactures admit the causal link. Many beneficial reforms have formidable opponents who, at least in democratic societies, have to disguise their opposition to reform in imperfect scientific knowledge. Clear and persuasive evidence needs to be accumulated to counter these claims. How is this evidence to be accumulated?

Micro-level evidence on the behavior of firms and households can be used to examine questions about causality. Micro-level evidence can be produced and used in several ways:

Surveys can be used to study behavior at the level of the household or firm

Surveys can also be used to create data sets at the level of sub-national jurisdictions

In depth interviews can be used to investigate reasons for actions, and for reliability checks on surveys

Historical narratives can also be used to investigate reasons for actions

Experiments can be used to create artificial institutional variation to investigate the effects of institutional innovations that don't occur naturally

A.3 Surveys

Surveys can be used to ask close-ended (typically multiple choice) questions of a large number of randomly selected people. These samples can be designed so they are representative of all or most of the districts in the country being studied. The information collected can be used both at the individual level and for cross-district comparisons.

I will begin by describing cross-district comparisons: a methodology similar to cross-country regressions but which can answer some of the methodological concerns about cross-country regressions (dodgy data and selection, but not causality).

In a study of the Philippines IRIS staff (Azfar, Kahkonen and Meagher 2001; Azfar, Gurgur, Kahkonen, Lanyi and Meagher 2000; Azfar and Gurgur 2001) examined the effect of corruption on health and education outcomes. They randomly selected 4 municipalities from 20 randomly selected provinces, for a total of 80 municipalities, which allowed them to do a cross-municipal analysis. A survey of this magnitude costs around \$100,000 to conduct and it costs as much again to analyse the data and write up the results.

The first problem they faced was measurement of corruption –of which many economists are understandably skeptical. To reassure the reader they cleaned the data of perception bias and performed a number of reliability checks on the data to answer these concerns. Their corruption data consisted of questions about specific instances of corruption asked of public officials (stealing funds; stealing equipment; taking bribes; buying jobs; getting paid and not working), a general question about corruption asked of municipal officials, and a general question about corruption asked of households. Corruption indices were constructed using

answers from these different questions. The data were cleaned of respondent bias –for several reasons some respondents may give higher corruption ratings than others even though they live in identically corrupt municipalities- by using answers to a question about national corruption. Since national corruption is the same for everyone in the sample different ratings for national corruption must almost by definition reflect respondent bias, and these difference can be used to filter responses about local corruption. This was an important step, respondent bias seems to account for 15% of the differences in perceptions of municipal corruption. The next step was conducting consistency checks on the data, which generally check whether municipalities deemed highly corrupt by one set of respondents are also rated highly corrupt by other respondents. Reassuringly, the data passed all consistency checks and Azfar et al. moved to the next step of the analysis.

In the next step on the analysis they examined the effect of these corruption measures on several health and education outcomes. They used knowledge of required immunizations by health officials, and index of satisfaction ratings and waiting times from households, and reports on increases in immunizations and decreases in diseases from health officials as measures of health outcomes. They used satisfaction ratings and scores on the National Elementary Aptitude Test as measures of education outcomes. In each regression they used different source of data for the corruption variable and the health/education outcome, to minimize the effect of any respondent bias that wasn't filtered out. They found generally negative effects of corruption on outcomes in all cases and the effects were often significant. Thus it seems that corruption does undermine the delivery of health and education in the Philippines.

This cross-district study supplements similar findings at the cross-national level (Gupta et al.) in several important ways. First it uses independent data focusing on one country rather than looking across countries, and two results which resonate are better than one. Second, the data were collected in a systematic and uniform way, which generally is not done at the cross-country level (the only micro-level survey I am aware of that systematically asks the same question in a large number of countries, is the World Values Survey). Third it was possible to do a number of reliability checks on the data, which can be done at the cross-country level, as Transparency International does, but only at the costs of truncated samples and selection bias. Fourth, they were able to clean the corruption data of respondent bias, which cannot easily be done at the cross-national level. Finally for at least some of the analysis they were able to run regressions on almost the entire sample, which mitigates concerns about selection bias. Thus sub-national analyses can adequately respond to questions about the quality and comparability of the data which plague cross-national analyses. Furthermore, if there are serious concerns about omitted variables in cross-country regressions it may be possible to collect data on these variables at the sub-national level. As decentralization proceeds around the world, an increasing number of countries have meaningful cross-jurisdictional variation in institutions, and this method can be effectively used to evaluate the effects of institutions on performance in many countries. Indeed, a number of economists are now conducting analyses using cross-jurisdictional data at the sub-national level.

In addition to cross-jurisdictional analysis, surveys can also provide information at the level of the household or firm about the effect of institutions on socio-economic outcomes. Although institutions only vary across jurisdictions, they are used by private actors. These

private actors can provide us with information about the impact of institutions on outcomes. For instance the following questions could be asked in a household survey

Does you eldest child go to school?

If yes When you took your eldest to be admitted to school, did you have to pay a bribe?

 If yes How much did you have to pay?

 Do you have to pay bribes every year to the principal or teachers of the school?

 If yes How much do have to pay every year

If no Why doesn't your eldest child go to school?

 1. we need him to work at home

 2. we cant afford the fees

 3. we cant afford the bribes

 4. he doesn't like school

 5. the school is very bad

 6. Other specify _____

Does you second child go to school?

 If yes.....

If the household reports spending a non-trivial proportion of its income on bribe payments to the eldest child's school and states that the reason the second child does not go to school is that they can't afford the bribe payments, then this information would indicate that corruption does lead to lower enrollment. If this is systematically found for a large number of households, and jurisdictions with high corruption ratings have low enrollments then the conjunction of these pieces of evidence would strongly indicate that corruption leads to low enrollment rates.

The conjunction of micro and macro level evidence can produce convincing arguments where any one piece might not be persuasive. An example we have already discussed in the work of Swamy et al. who found that at the micro level women disapproved more of corruption than men and firms managed by women paid fewer bribes, and at the macro level that countries where women were more involved in public life had less corruption. A final piece of evidence which could settle the argument is direct evidence on the behavior of women in parliament with respect to corruption –how do they vote on campaign finance reform, what bills do the introduce and what committees are they part of. Similarly cross country results linking a large middle class to better governance would be helped by micro-evidence that the middle class does in fact vote more often, is better informed and votes for better reasons. Links between inequality and crime would be helped by micro-level evidence linking extreme poverty to crime, and links between trade reform and broad based growth would be helped by micro-level evidence on the access of the poor to liberalized markets.

A.4 In Depth Interviews

Surveys have several limitations. Questions have to be phrased in a way that the answers can sensibly be listed as a set of options, and the survey instrument has to be kept below a certain length (typically 150 close-ended questions).

Complex issues of causality may therefore have to be investigated using in depth interviews. We can easily think of ways we could follow responses to the questions above by more detailed questions about the effect of corruption on the decision to send the child to school. The survey might even have missed out on corruption as the culprit even if the respondent had sufficient information to allow us to infer that corruption was the root cause of the child missing school. For instance the reason may be that the teacher is illiterate –this happens in Pakistan- and the reason for the teacher being illiterate is that he was appointed as the repayment of a favor by the Chief Minister. Or there are no text-books because they have all been stolen. Or

In depth interviews are however more costly as they involve the lead researcher's time, and conducting enough to get a statistically defensible sample can be exhausting. The best strategy may be to both conduct a randomized survey and a few detailed interviews where statistical patterns can be presented from survey data, with corroborating anecdotes from detailed interviews.

A.5 Historical Analyses and Analytic Narratives

Analytic narratives are one of the most powerful tools for understanding the links between different levels of institutions and economic performance. The term refers to a method that combines neat theoretical predictions (analytic) with thick historical description (narrative). A good researcher can read documents and archival material, interview other scholars and -for modern day problems- political actors and “seek to understand the actor's preferences, their perceptions, their evaluation of alternatives, the information they possess, the expectations they form, the strategies they adopt and the constraints that limit their action”. As an empirical method for uncovering causality in social science such research and analysis can be a powerful tool.

One of the first and most impressive analytic narratives for the student of NIE is Mancur Olson's “Logic of collective action”. One of the great strengths of the “logic” is the breadth and depth of discussion of real world examples that support its basic hypothesis. The “logic” starts with a mathematical statement of the theory of public goods which states that private individuals would under-supply public goods. But it was the breadth of applications outside economics to theories of pressure groups and class struggles that greatly influenced later analyses in political science. The analysis of extra-rational and organizational factors that reinforced the predictions of orthodox economic theory served to answer the frequent criticism that economists rely on an unrealistic model of human behavior that makes unrealistic predictions. And the analysis of trade unions and farm lobbies persuasively demonstrates the empirical relevance of the central hypothesis of *The Logic* that large groups can only organize collective action if they have access to selective incentives.

Another impressive analytic narrative for the student of NIE is Douglas North's “Structure and change in economic history”. While lacking a mathematical theoretical framework (like Bates' article in *Analytic Narratives*) there is a clear story that North tells on the links between democracy, legal institutions, financial development and economic performance. The rich detail of the narrative leaves the reader with little doubt that democracy laid the

foundation of secure property rights and the development of commercial law, and that this led to financial development and economic growth.

Another excellent analytic narrative is Avner Grief's account of governance in Genoa. Genoa was unfortunately beset with several clans vying and warring for power. The existence of an external threat motivated them to adopt a political system where they hired an outside "podesta" to run their government. The podesta was not only well paid but was given clear incentives to run Genoa well. He had to stay in Genoa and be audited following his reign and was fined for any misconduct. Excellent performance on the other hand would improve his chances of being appointed podesta somewhere else. These incentives in Genoa led to good governance, military expansion and prosperity. This is another example of how a society may mitigate the consequences of its poor social structure (warring tribes) by cleverly designed political institutions.

Much as economics has done well to colonize the other social sciences and made the analytic, economics would benefit from making room for narratives in its own method. Increasingly narratives are seen in economic articles even outside history. An excellent example is Hart, Shleifer and Vishny's new classic on the "Proper scope of government: Theory and an application to prisons", which combines the theory of contracts with a detailed narrative examination of the incentives in the prison system.

A.6 Experiments

Another empirical method which has now entered the mainstream of economic analysis is experiments. An economic experiment typically involves a number of subjects –often University Students- who play "games" with each other for real stakes (\$). The results of these experiments have been important in casting doubt on long cherished assumptions of rationality in economics. The handbook by Kagel and Roth (1995) is an excellent compendium of the methods and results of experimental economics.

One of the best known experiments is the ultimatum game. Two subjects A and B play this game to divide \$10. A moves first offering B a portion of the \$10. He can offer \$0, \$1, \$2....all the way to \$10. Subject B can accept or reject the offer. If he rejects the offer both parties get nothing. The "hyper rational" (everybody is rational and everybody knows everybody else is rational) equilibrium is A keeping \$9 for himself and only offering \$1 to B, knowing that B will accept it. In fact however such offers are rarely made and often rejected if they are. Most first movers offer \$3 or more, many offering \$5. Many second movers reject offers of less than \$5. The game has been played in developing countries for stakes that are a non-trivial fraction of annual income and similar results are found. Human beings have deep set notions of fairness and if they feel wronged are likely to want revenge. Other humans knowing this "play fair".

The steady accumulation of such facts and corroborative evidence from other games like "the dictator game" and the "Allais paradox" have called into question the rationality postulate as a description of human behavior. Most economists today think that "rational actors" with well

defined utility functions are analytically convenient for many purposes but not accurate descriptions of human behavior.

One important advantage of experiments for the institutional economist is that institutions can be varied in clean and systematic ways in a classroom experiment. The cost of paying subjects is often less than the cost of collecting survey data (\$10,000 in payments can generate sufficient data for a meaningful analysis). The main disadvantage with experiments is the suspicion that players act differently in experimental settings than they would in real life. This concern is partially grounded in the expectation that undergraduates especially economics undergraduates are not representative of the population. Certainly lessons from the behavior of American undergraduates are treated with suspicion when used to predict behavior in developing countries. This concern can be resolved by actually conducting experiments with representative people in developing countries. The deeper concern is that people act differently in experimental settings. Here emerging evidence from the analysis of questions like choice over time, where experimental results correspond more closely than the predictions of economic theory with observed real world behavior have given more credence to experimental economics (Laibson)

Some recent experiments have direct relevance to NIE. Marco Casari and Charles Plott designed an experiment that harnesses human vices such as spite to the production of efficient outcomes. They replicated a centuries old institution called “carte de regola” used to protect common property resources in the Italian Alps, in a classroom laboratory. This system rewards the discoverer of a violation with part of the fine charged to the violator. This effectively harnesses the behavior of spiteful agents, who spend resources identifying violators rather than over-consuming which they would otherwise do. Casari and Plott find that there are spiteful agents who willingly engage in finding and punishing violators even when incentives to do so aren’t strong enough for strictly rational agents to do so. When incentives are sharpened to the point where even strictly rational agents would spend resources identifying violators the efficiency of outcomes sharply increases.

One important lesson from this experiment is that rather than try to change human nature, smart institutional design should harness both selfishness and other morally questionable human qualities, such as ambition and spite for socially useful purposes.

Other experiments relevant to NIE are also being conducted. Jean-Robert Tyran and Lars Feld have shown that rule obedience is higher among groups that make rules democratically. Azfar and Nelson are investigating the effects of government wages, the separation of powers and the difficulty of detection on corruption levels and probability of exposing corruption. Experiments are a promising new method that can be used in NIE, and are uniquely capable of analyzing novel institutions that don’t naturally occur.

Appendix B. Recommendations for Further Reading.

I have learnt a lot –but probably not enough from the following excellent books and articles. The interested reader would them both enjoyable and enlightening.

The chapters by Dasgupta, and Hoff & Stiglitz are both analytical and discursive. Dasgupta takes a more game theoretic view of institutions with some focus of beliefs, equilibria and social order. Dethier's article is a more discursive but perhaps more exhaustive review.

Dasgupta, Partha Economic Progress and the idea of social capital, in Partha Dasgupta and Ismail Serageldin eds. "Social capital: A multifaceted perspective"

Hoff, Karla and Joseph Stiglitz Modern economic theory and development, in Meier and Stiglitz eds. Frontiers of Development Economics 2001, The World bank and Oxford University Press.

Dethier, Jean-Jaques The economic approach to governance: How political and legal institutons affect economic peforamnce

An excellent account of the institutional foundations on the development of the Western world is.

North, Douglas. Structure and change in economic history, 1983

For the reader specifically interested in the incentive problem Kreps' chapter though a little dated is probably still the best analytical account, and the JEL article by Canice Prendergast is both updated and full of interesting applications to the management of firms. Avinash Dixit's article has many applications to public sector management.

Dixit, Avinash "Incentives and organizations in the public sector: An interpretative review, mimeo Princeton University 2001.

Kreps, David "Moral hazard and incentives" in "A course on microeconomic theory", Princeton 1990.

Prendergast, Canice The provision of incentives in firms, JEL 1999.

Appendix C: Glossary of terms

principle-agent problem refers to any situation in which the agent who is supposed to be serving the interests of the principal finds it not in his interest to do. The solution to a principal agent problem is to provide the agent with incentives to align his interests with those of the principal.

moral hazard, refers to a class of principal agent problems. Moral hazard arises in a situation where the agent bears little consequence from his actions and may be careless and endanger his interests and those of others. Examples are fire insurance and insuring bank deposits. The term moral hazard is sometimes used by economists to refer to a broader class of principal agent problems more precisely referred to as “hidden action” problems, where the principal cannot observe the agent's action.

adverse selection problems refer to situations where one party to a transaction cannot observe the value of the good or service being transacted. They are sometimes referred to as “hidden value” problems. The classic example is the market for “lemons” (used cars) where the market may remain sub-optimally small because buyers don't trust sellers.

The hold-up problem or incomplete contracts problem refers to the inefficiencies created by two parties to a contract being unable to observe the quality of goods they would have to trade in the future for present day investments to be worthwhile. The inability to measure quality can make long-term contracts impractical and discourage present day investment.

collective action problems arise when a group of individuals wants a good -like clean water for a village- but no one individual has the means of providing it. Self-interested individuals may not find it in their interests to contribute. Social pressure, fines and exclusion from benefits can be used to overcome collective action problems.

incomplete contracts refers to situations when important variables to a transaction cannot be verified by courts and so cannot be usefully included in a contract. In some such situations reconfiguring rights to profits from the collective enterprise can resolve the incomplete contracts problem.

information asymmetries arise when one party to a transaction has more information on important factors than other parties. Information asymmetries can refer to both “hidden action” and “hidden value” problems.

transaction costs include –but are not limited to- information asymmetries, and the administrative costs of mitigating the problems created by informational asymmetries.

property rights include the rights of control and sale of assets. Principal agent problems arise when those who control an asset –managers- are not the same as those who own the rights of sale –shareholders-

social capital refers to those components of social structure which have productive consequences.